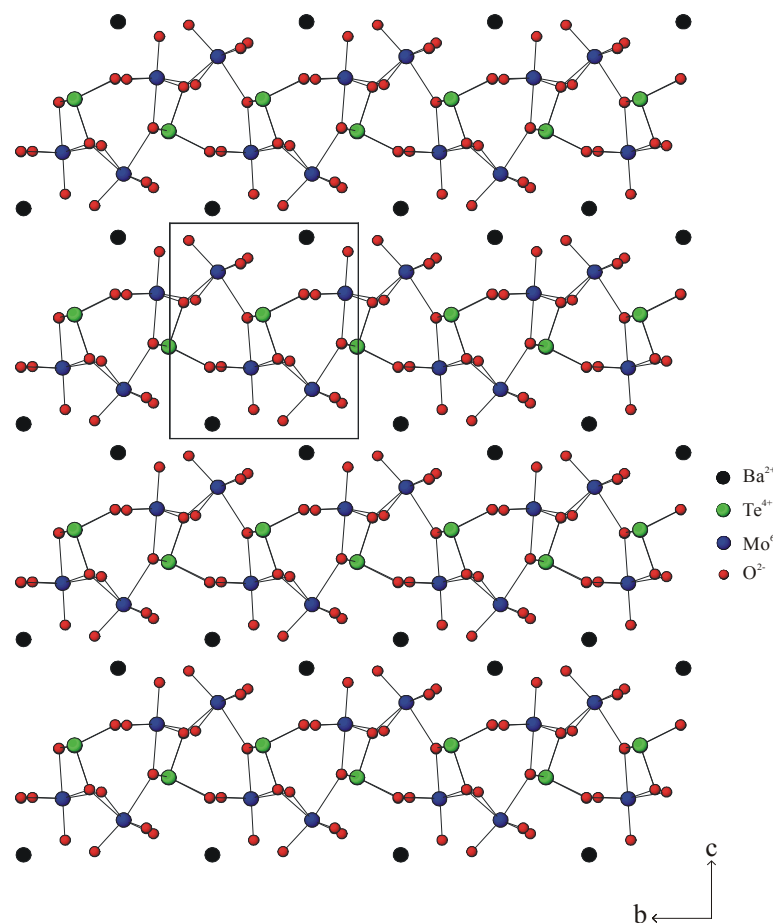


The Synthesis and Characterization of New Ferroelectric- Second-Harmonic Generating Oxide Materials

P. Shiv Halasyamani, University of Houston: DMR-0092054

Second-order nonlinear optical (NLO) materials find technological uses in ultra-fast shutters, optical waveguides, and frequency doublers. In order to design superior NLO materials, a detailed understanding of structure-property relationships is required. On the right is a new NLO material, $\text{BaTeMo}_2\text{O}_9$, synthesized in our laboratory that is an extremely efficient frequency doubler.

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Education:

Four undergraduates (Joseph Orzechowski, Jolea Bryant, Hyun-Seup Ra, and Alex Gittens), two graduate students (Kang Min Ok and Yetta Porter), and two post-doctoral associates (N.S.P. Bhuvanesh and Joanna Goodey) contributed to this work. Ms. Porter is currently the RSEC teaching post-doctoral fellow at Wichita State University. Dr. N.S.P. Bhuvanesh is a staff crystallographer at Texas A&M University, and Dr. Joanna Goodey is on the faculty at Barnard University.

Outreach:

The PI is actively involved in both the NSF-REU summer program as well as the NSF-Solid State Chemistry Program. Students involved in the former are Cinttya Chavez, Francisco Escobedo, and Jolea Bryant, whereas in the latter program Joseph Orzechowski participated. Please note that the majority of the students are from under-represented groups.